

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Joel Moss et al.

Application No.: 10/526,820

Filed: March 3, 2005

Confirmation No.: 5471

For: FACTORS THAT BIND INTESTINAL  
TOXINS

Examiner: To be assigned

Art Unit: 1617

Attorney Reference No.: 4239-66646-06

CERTIFICATE OF MAILING

I hereby certify that this paper and the documents referred to as being attached or enclosed herewith are being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: MAIL STOP 16, DIRECTOR OF THE U.S. PATENT AND TRADEMARK OFFICE, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Attorney or Agent  
for Applicant(s)

*W. J. Ruppert*

Date Mailed June 6, 2006

MAIL STOP 16  
DIRECTOR OF THE U.S. PATENT AND TRADEMARK OFFICE  
P.O. BOX 1450  
ALEXANDRIA, VA 22313-1450

REQUEST FOR REFUND UNDER 37 C.F.R. § 1.26

Applicants hereby request a refund of \$1,250.00 for the excess claims fees improperly charged by the U.S. Patent and Trademark Office (USPTO) to Deposit Account No. 02-4550 in connection with the above-referenced application.

The amount of \$1,350.00 was charged to Deposit Account No. 02-4550 on November 8, 2005, as shown in a highlighted manner on the attached November 30, 2005 Deposit Account Statement (**Exhibit A**). It appears that this charge is for extra claims fees for the application. This charge is erroneous in view of the following facts:

Applicants filed this application on March 3, 2005, with a Preliminary Amendment to reduce the number of claims, among other things. A copy of the original patent application Transmittal Letter showing the total number of claims filed with this application is attached as **Exhibit B**. A copy of the Preliminary Amendment filed with the application, showing amendments to the claims, is attached as **Exhibit C**. It appears that the filing fees were

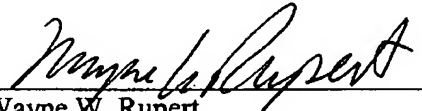
BEST AVAILABLE COPY

calculated by the USPTO prior to entry of the Preliminary Amendment, and thus the charge to the deposit account was incorrectly made. As indicated on the Transmittal Letter, this application was amended upon filing to include 49 total claims and three independent claims. Therefore, the filing fee submitted with the application (\$2,750.00 plus \$40.00 recordation fee, totaling \$2,790.00) is correct. No additional charges were required. Applicants therefore request a refund of the miscalculation of claims fees, totaling \$1,350.00.

Please mail the refund to the undersigned agent, or credit the refund to Deposit Account No. 02-4550. A copy of this document or paper is enclosed.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

By   
Wayne W. Rupert  
Registration No. 34,420

One World Trade Center, Suite 1600  
121 S.W. Salmon Street  
Portland, Oregon 97204  
Telephone: (503) 226-7391  
Facsimile: (503) 228-9446

BEST AVAILABLE COPY



## UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
www.uspto.gov

MONTHLY STATEMENT  
OF DEPOSIT ACCOUNT

To replenish your deposit account, detach and  
return top portion with your check. Make check  
payable to Director of Patents & Trademarks.

KLARQUIST SPARKMAN CAMPBELL LEIGH & WHIN FINA  
ACCOUNTING  
121 S.W. SALMON STREET  
SUITE 1600  
PORTLAND OR 97204

Account No.
024550
Date
11-30-05
Page
1

PLEASE SEND REMITTANCES TO:  
U. S. Patent and Trademark Office  
P.O. Box 70541  
Chicago, IL 60673

DATE POSTED			CONTROL NO.	DESCRIPTION (Serial, Patent, TM, Order)	DOCKET NO.	FEE CODE	CHARGES/ CREDITS	BALANCE
MO.	DAY	YR.						
11	1	05	1	78675151	6592-71140-12/LMC:GH	8507	15.00	19482.08
11	1	05	182	10551571	7126-71851-01	8021	40.00	19442.08
11	1	05	218	10554493	5585-72353-01	2631	150.00	19292.08
11	1	05	219	10554493	5585-72353-01	2642	200.00	19092.08
11	1	05	220	10554493	5585-72353-01	2633	100.00	18992.08
11	1	05	221	10554493	5585-72353-01	2615	150.00	18842.08
11	1	05	1249	78744297	332-72154-01/ALW	7007	275.00	18567.08
11	1	05	1251	78744298	332-72155-01/ALW	7007	275.00	18292.08
11	1	05	1581	2303621	7347-71515-01/RJP	7205	100.00	18192.08
11	1	05	1582	2303621	7347-71515-01/RJP	7208	200.00	17992.08
11	2	05	2	10962191	5437-6078-03	1806	180.00	17812.08
11	2	05	207	78671777	6592-71599-09/RJP:GH	8507	15.00	17797.08
11	2	05	522	78744792	6592-72247-01	7007	275.00	17522.08
11	3	05	1	10785203	5763-70332-02	1806	180.00	17342.08
11	3	05	3	60692845		8021	40.00	17302.08
11	3	05	9	75350443		9204	-100.00	17402.08
11	3	05	19	11191618	7276-70212-02	8021	40.00	17362.08
11	3	05	46	10535523		8021	40.00	17322.08
11	3	05	50	10535523		8021	40.00	17282.08
11	3	05	51	11134703	4239-67015-05	8021	40.00	17242.08
11	3	05	54	10535523	6395-66741-06	8021	40.00	17202.08
11	4	05	18	78424853	7347-71617-02	7402	300.00	16902.08
11	4	05	19	78424853	7347-71617-03/RAK	7402	300.00	16602.08
11	4	05	26	10996184	612-71612-01	1201	200.00	16402.08
11	4	05	27	10996184	612-71612-01	1202	50.00	16352.08
11	4	05	28	10996184	612-71612-01	1252	450.00	15902.08
11	4	05	143	09948821	3382-61170	1814	130.00	15772.08
11	4	05	910	78209176	1505-64409-01	7004	450.00	15322.08
11	7	05	3	PCT/US05/33708		9204	-700.00	16022.08
11	7	05	20	5484470	7276-72044-01	2552	1150.00	14872.08
11	7	05	21	5484470	7276-72044-01	1558	1640.00	13232.08
11	7	05	22	78671777	6592-71599-04/RJP:GH	8507	15.00	13217.08
11	7	05	123	11191618		9204	-60.00	13277.08
11	7	05	269	11265675	7273-70679-02	2011	150.00	13127.08
11	7	05	270	11265675	7273-70679-02	2111	250.00	12877.08
11	7	05	271	11265675	7273-70679-02	2311	100.00	12777.08
AN AMOUNT SUFFICIENT TO COVER ALL SERVICES REQUESTED MUST ALWAYS BE ON DEPOSIT					OPENING BALANCE	TOTAL CHARGES	TOTAL CREDITS	CLOSING BALANCE

BAC0208 (8/1004)

BEST AVAILABLE COPY

EXHIBIT



## UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
www.uspto.gov

MONTHLY STATEMENT  
OF DEPOSIT ACCOUNT

To replenish your deposit account, detach and  
return top portion with your check. Make check  
payable to Director of Patents & Trademarks.

KLARQUIST SPARKMAN CAMPBELL LEIGH & WHIN FINA  
ACCOUNTING  
121 S.W. SALMON STREET  
SUITE 1600  
PORTLAND OR 97204

Account No.
024550
Date
11-30-05
Page
2

PLEASE SEND REMITTANCES TO:  
U. S. Patent and Trademark Office  
P.O. Box 70541  
Chicago, IL 60673

DATE POSTED			CONTROL NO.	DESCRIPTION (Serial, Patent, TM, Order)	DOCKET NO.	FEE CODE	CHARGES/ CREDITS	BALANCE
MO.	DAY	YR.						
11	7	05	272	11265675	7273-70679-02	2202	425.00	12352.08
11	8	05	2	11181668		2011	150.00	11752.08
11	8	05	102	11181668		2051	65.00	11002.08
11	8	05	103	11181668		2111	250.00	
11	8	05	104	11181668		2311	100.00	
11	8	05	105	11181668		2202	125.00	
11	8	05	106	11181668		2005	100.00	
11	8	05	290	60733327	7273-72343-01	2631	150.00	
11	8	05	513	10555408	2847-72452-01	2633	100.00	
11	8	05	514	10555408	2847-72452-01	2642	200.00	
11	8	05	515	10555408	2847-72452-01	8021	40.00	
11	8	05	516	10555408	2847-72452-01	9203	-10000.00	
11	9	05	11	E-REPLENISHMENT		2251	60.00	
11	9	05	75	10347542	11001-006-99	8021	40.00	
11	9	05	87	60684491	160-70957-01	7007	275.00	
11	9	05	124	78749463	6592-72530-01	8021	80.00	
11	9	05	182	60577283	160-68644-02	1251	120.00	
11	9	05	209	10319018	1011-62960	8021	40.00	
11	9	05	232	60659513	4239-68725-01	8021	40.00	
11	9	05	291	PCT/US05/13236		8021	40.00	
11	10	05	2	10719885	1505-67088	1811	100.00	
11	10	05	134	10518956		8021	40.00	
11	10	05	350	78750509	332-68377-01/ALW	7007	275.00	
11	10	05	355	78750512	332-68378-01/ALW	7007	275.00	
11	10	05	362	78750515	332-72282-01/ALW	7007	275.00	
11	10	05	391	78750536	7347-72262-01/RJP	7001	975.00	
11	10	05	615	78750656	332-68379-01/ALW	7007	275.00	
11	10	05	1669	78751180	6592-72601-01	7007	275.00	
11	14	05	103	11181668		2202	-125.00	
11	14	05	104	11181668		2201	100.00	
11	14	05	105	11181668		2202	25.00	
11	14	05	106	11181668		2251	60.00	
11	14	05	116	10554143	7126-72225-01	8021	40.00	
11	14	05	121	11261069	7291-71804-01	8021	40.00	
11	14	05	123	10554139	7126-72254-01	8021	40.00	

AN AMOUNT SUFFICIENT TO  
COVER ALL SERVICES REQUESTED  
MUST ALWAYS BE ON DEPOSIT

OPENING BALANCE

TOTAL CHARGES

TOTAL CREDITS

CLOSING BALANCE

BEST AVAILABLE COPY



## UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
www.uspto.gov

MONTHLY STATEMENT  
OF DEPOSIT ACCOUNT

To replenish your deposit account, detach and  
return top portion with your check. Make check  
payable to Director of Patents & Trademarks.

KLARQUIST SPARKMAN CAMPBELL LEIGH & WHIN FINA  
ACCOUNTING  
121 S.W. SALMON STREET  
SUITE 1600  
PORTLAND OR 97204

Account No.	024550
Date	11-30-05
Page	3

PLEASE SEND REMITTANCES TO:  
U. S. Patent and Trademark Office  
P.O. Box 70541  
Chicago, IL 60673

DATE POSTED			CONTROL NO.	DESCRIPTION (Serial, Patent, TM, Order)	DOCKET NO.	FEE CODE	CHARGES/ CREDITS	BALANCE
MO.	DAY	YR.						
11	14	05	148	60734814		2005	100.00	16297.08
11	14	05	440	60700964	4550-70903-01/RJP	8021	40.00	16257.08
11	14	05	459	PCT/US05/24529	3533-67309-02	8021	40.00	16217.08
11	15	05	32	11191618		9204	-250.00	16467.08
11	15	05	51	10652295	6565-66784-01	1251	120.00	16347.08
11	15	05	623	78753559	6592-72142-01	7007	275.00	16072.08
11	15	05	1567	78754082	2747-72644-01/KSK	7001	325.00	15747.08
11	16	05	4	10237567	SALKINS044CP	2814	65.00	15682.08
11	16	05	27	10533477	6682-66959-02	1632	400.00	15282.08
11	16	05	34	11272966		9204	-490.00	15772.08
11	16	05	38	11183271		9204	-130.00	15902.08
11	16	05	69	2464798	7319-47802-01/RAK	8521	40.00	15862.08
11	16	05	233	4704876	158-8677	8021	1080.00	14782.08
11	16	05	814	78754681	7347-72650-01/LMC	7001	325.00	14457.08
11	17	05	1	10851755	6454-68419-01	1202	1100.00	13357.08
11	17	05	32	5084291	158-8677	8021	200.00	13157.08
11	17	05	64	E-REPLENISHMENT		9203	-10000.00	23157.08
11	17	05	70	10616122	0140022US	2252	225.00	22932.08
11	17	05	211	11157473	2242-69454-01	8021	40.00	22892.08
11	18	05	1	10237567	SALKINS044CP	2252	215.00	22677.08
11	18	05	8	5293803	158-8677	8021	40.00	22637.08
11	18	05	12	10001268	6395-61264	1251	120.00	22517.08
11	18	05	13	10001268	6395-61264	1806	180.00	22337.08
11	18	05	13	09989946		9204	-300.00	22637.08
11	18	05	49	10871805		9204	-300.00	22937.08
11	18	05	51	10884514		9204	-300.00	23237.08
11	18	05	53	10871960		9204	-300.00	23537.08
11	18	05	58	5293803	158-8677	8021	40.00	23497.08
11	18	05	218	10305800		8021	40.00	23457.08
11	18	05	232	10305800	4239-63964-01	8021	40.00	23417.08
11	18	05	728	78756460	6431-72664-01	7001	1950.00	21467.08
11	18	05	738	78756465	6431-72663-01	7001	650.00	20817.08
11	21	05	57	10467684	5578-66536/RJP	2201	100.00	20717.08
11	21	05	60	11281044	7172-70319-02	2011	150.00	20567.08
11	21	05	61	11281044	7172-70319-02	2111	250.00	20317.08
11	21	05	62	11281044	7172-70319-02	2311	100.00	20217.08
AN AMOUNT SUFFICIENT TO COVER ALL SERVICES REQUESTED MUST ALWAYS BE ON DEPOSIT					OPENING BALANCE	TOTAL CHARGES	TOTAL CREDITS	CLOSING BALANCE



## UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
www.uspto.gov

MONTHLY STATEMENT  
OF DEPOSIT ACCOUNT

To replenish your deposit account, detach and return top portion with your check. Make check payable to Director of Patents & Trademarks.

KLARQUIST SPARKMAN CAMPBELL LEIGH & WHIN FINA  
ACCOUNTING  
121 S.W. SALMON STREET  
SUITE 1600  
PORTLAND OR 97204

Account No.
024550
Date
11-30-05
Page
4

PLEASE SEND REMITTANCES TO:  
U. S. Patent and Trademark Office  
P.O. Box 70541  
Chicago, IL 60673

DATE POSTED			CONTROL NO.	DESCRIPTION (Serial, Patent, TM, Order)	DOCKET NO.	FEE CODE	CHARGES/ CREDITS	BALANCE
MO.	DAY	YR.						
11	21	05	63	11281044	7172-70319-02	2202	725.00	19492.08
11	21	05	64	11281044	7172-70319-02	2201	400.00	19092.08
11	21	05	76	60682526		8021	40.00	19052.08
11	21	05	103	60678420		8021	40.00	19012.08
11	21	05	526	78757411	7346-72678-01	7001	325.00	18687.08
11	21	05	740	78757530	131-70598-01	7001	325.00	18362.08
11	22	05	1	10211929	6541-63376	1251	120.00	18242.08
11	22	05	166	11007075	3533-69199-03/JBH:MLB	8007	100.00	18142.08
11	22	05	219	60612952	1011-69479-02	8021	160.00	17982.08
11	22	05	943	78758746	7118-72667-01	7001	325.00	17657.08
11	22	05	1785	1339708	7347-72017-01/RJP	7205	100.00	17557.08
11	22	05	1786	1339708	7347-72017-01/RJP	7201	400.00	17157.08
11	22	05	1787	1339708	7347-72017-01/RJP	7206	100.00	17057.08
11	22	05	1788	1339708	7347-72017-01/RJP	7203	100.00	16957.08
11	23	05	3	60639955	6235-70161-01/SLR:DM	8007	20.00	16937.08
11	23	05	19	78565879	7347-72255-01/LMC	8521	40.00	16897.08
11	23	05	20	78565879	7347-72255-01/LMC	8522	50.00	16847.08
11	23	05	72	76599302	7115-69136-01/DPP/RJP	6006	100.00	16747.08
11	23	05	91	11281044	7172-70319-02	8021	40.00	16707.08
11	23	05	686	78759678	3720-72682-01/JEG	7001	325.00	16382.08
11	25	05	62	60706129		8021	40.00	16342.08
11	25	05	179	76599302	7115-69136-01/DPP/RJP	6006	-100.00	16442.08
11	25	05	761	78760673	131-72669-01	7001	325.00	16117.08
11	25	05	767	78760677	131-72670-01	7001	325.00	15792.08
11	28	05	6	0616696		6205	100.00	15692.08
11	28	05	7	0616696		6201	400.00	15292.08
11	28	05	21	2963032	7204-68462-02/LMC:TH	6212	100.00	15192.08
11	28	05	23	29175852	7231-70187-01	2253	510.00	14682.08
11	28	05	52	10406912	6541-65600	1801	790.00	13892.08
11	28	05	55	11084408		8021	40.00	13852.08
11	28	05	110	60716807	4239-69494-01	8021	40.00	13812.08
11	28	05	119	60716807	4239-69494-01	8021	40.00	13772.08
11	28	05	123	09892350	MLF-600-13	2801	395.00	13377.08
11	28	05	280	60547328		8021	40.00	13337.08
11	28	05	302	60547328		8021	40.00	13297.08
11	28	05	303	PCT/US05/06396		8021	40.00	13257.08
AN AMOUNT SUFFICIENT TO COVER ALL SERVICES REQUESTED MUST ALWAYS BE ON DEPOSIT					OPENING BALANCE	TOTAL CHARGES	TOTAL CREDITS	CLOSING BALANCE



## UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
www.uspto.gov

MONTHLY STATEMENT  
OF DEPOSIT ACCOUNT

To replenish your deposit account, detach and  
return top portion with your check. Make check  
payable to Director of Patents & Trademarks.

KLARQUIST SPARKMAN CAMPBELL LEIGH & WHIN FINA  
ACCOUNTING  
121 S.W. SALMON STREET  
SUITE 1600  
PORTLAND OR 97204

Account No.	024550
Date	11-30-05
Page	5

PLEASE SEND REMITTANCES TO:  
U. S. Patent and Trademark Office  
P.O. Box 70541  
Chicago, IL 60673

DATE POSTED			CONTROL NO.	DESCRIPTION (Serial, Patent, TM, Order)	DOCKET NO.	FEE CODE	CHARGES/ CREDITS	BALANCE
MO.	DAY	YR.						
11	28	05	328	11152495		8021	40.00	13217.08
11	28	05	483	5718435	5026-44437-01	8021	40.00	13177.08
11	28	05	484	6126170	5026-44437-01	8021	40.00	13137.08
11	28	05	485	6367809	5026-44437-01	8021	40.00	13097.08
11	28	05	488	PCT/US05/11086		8021	40.00	13057.08
11	28	05	489	PCT/US50/11086		8021	40.00	13017.08
11	28	05	566	10511362		8021	40.00	12977.08
11	29	05	8	10697965	050005-000158.LSP.265218	2201	100.00	12877.08
11	29	05	9	10697965	050005-000158.LSP.265218	2202	25.00	12852.08
11	29	05	13	09995327	6541-60971	1251	120.00	12732.08
11	29	05	23	10697848	050005-000145.LSP.245951	1806	180.00	12552.08
11	29	05	776	2016147	7194-69764-01	7205	100.00	12452.08
11	29	05	777	2016147	7194-69764-01	7201	400.00	12052.08
11	30	05	8	STACEY C. SLATE		9204	-266.00	12318.08
11	30	05	113	60706562	7180-70877-01	8021	40.00	12278.08
11	30	05	114	11200692		8021	40.00	12238.08
AN AMOUNT SUFFICIENT TO COVER ALL SERVICES REQUESTED MUST ALWAYS BE ON DEPOSIT					OPENING BALANCE	TOTAL CHARGES	TOTAL CREDITS	CLOSING BALANCE
					19497.08	30680.00	23421.00	12238.08

<b>TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A NATIONAL STAGE FILING UNDER 35 U.S.C. § 371</b>		ATTORNEY'S DOCKET NUMBER 4239-66646-06
		U.S. APPLICATION NO. (If known, see 37 C.F.R. § 1.3) Not yet assigned
INTERNATIONAL APPLICATION NO. PCT/US2003/028282	INTERNATIONAL FILING DATE September 9, 2003	PRIORITY DATE CLAIMED September 10, 2002
TITLE OF INVENTION <b>FACTORS THAT BIND INTESTINAL TOXINS</b>		
APPLICANT(S) FOR DO/EO/US <b>Joel Moss and Masatoshi Noda</b>		
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:		
<ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. § 371.</li> <li>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. § 371.</li> <li>3. <input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. § 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. § 371(b) and PCT Articles 22 and 39(1). Items 5, 6, 9 and 21 indicated below are submitted to make this express request.</li> <li>4. <input checked="" type="checkbox"/> The United States has been elected in a Demand for International Preliminary Examination (Article 31).</li> <li>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. § 371(c)(2)) <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> has been communicated by the International Bureau.</li> <li>c. <input checked="" type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</li> </ol> </li> <li>6. <input type="checkbox"/> An English-language translation of the International Application (35 U.S.C. § 371(c)(2)). <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> is attached hereto.</li> <li>b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</li> </ol> </li> <li>7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. § 371(c)(3)) <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau to the United States Receiving Office).</li> <li>b. <input type="checkbox"/> have been communicated by the International Bureau.</li> <li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li>d. <input checked="" type="checkbox"/> have not been made and will not be made.</li> </ol> </li> <li>8. <input type="checkbox"/> An English-language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. § 371(c)(3)).</li> <li>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. § 371(c)(4)).</li> <li>10. <input type="checkbox"/> An English-language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. § 371(c)(5)).</li> </ol>		
Items 11 to 21 below concern document(s) or information included:		
<ol style="list-style-type: none"> <li>11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 C.F.R. §§ 1.97 and 1.98.</li> <li>12. <input checked="" type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 C.F.R. §§ 3.28 and 3.31 and the Recordal fee of \$40.00 are included.</li> <li>13. <input checked="" type="checkbox"/> A preliminary amendment.</li> <li>14. <input type="checkbox"/> An Application Data Sheet under 37 C.F.R. § 1.76.</li> <li>15. <input type="checkbox"/> A substitute specification.</li> <li>16. <input checked="" type="checkbox"/> Powers of attorney from the inventors.</li> <li>17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 37 C.F.R. §§ 1.821 - 1.825.</li> <li>18. <input checked="" type="checkbox"/> A second copy of the published International Application under 35 U.S.C. § 154(d)(4).</li> <li>19. <input type="checkbox"/> A second copy of the English-language translation of the international application under 35 U.S.C. § 154(d)(4).</li> <li>20. <input checked="" type="checkbox"/> Other items or information: <ol style="list-style-type: none"> <li><input checked="" type="checkbox"/> Abstract on a separate page.</li> <li><input type="checkbox"/> Written Opinion.</li> <li><input checked="" type="checkbox"/> Preliminary Examination Report.</li> <li><input checked="" type="checkbox"/> International Search Report.</li> <li><input checked="" type="checkbox"/> Copy of Reference Cited.</li> </ol> </li> </ol>		

EV510808334US

EXHIBIT



DATE OF DEPOSIT: March 3, 2005

U.S. APPLICATION NO. (if known, see 37 C.F.R. § 1.5)		INTERNATIONAL APPLICATION NO.		ATTORNEY'S DOCKET NUMBER	
Not yet assigned		PCT/US2003/028282		4239-66646-06	
The following fees are submitted:					
21. <input checked="" type="checkbox"/> Basic national fee.....				\$ 300.00	
22. <input checked="" type="checkbox"/> Examination fee If international preliminary examination report prepared by USPTO and all claims satisfy novelty, nonobviousness (inventive step) and utility (industrial applicability) i.e., provisions of PCT Article 33(1)-(4).....				\$ 100.00	
All other situations.....				\$200	
23. <input checked="" type="checkbox"/> Search fee Search fee (37 C.F.R. 1.445(a)(2)) has been paid on the international application to the USPTO as an International Searching Authority.....				\$ 100.00	
International Search Report prepared and provided to the Office.....				\$0	
All other situations.....				\$500	
TOTAL OF 21, 22, and 23 =				\$ 500.00	
<input type="checkbox"/> Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing or computer program listing filed in electronic medium). The fee is \$250 for each additional 50 sheets of paper or fraction thereof.					
Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof (round up to a whole number)	RATE		
62 - 100	0 / 50 =	0	x \$250	\$ 0.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than 30 months from the earliest claimed priority date (37 C.F.R. § 1.492(e)).				\$ 0.00	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	49 - 20 =	29	x \$50.00	\$ 1,450.00	
Independent Claims	7 - 3 =	4	x \$200.00	\$ 800.00	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$360.00	\$ 0.00	
TOTAL OF ABOVE CALCULATIONS =				\$ 2,750.00	
<input type="checkbox"/> Reduction of 1/2 for filing by small entity. Small entity status is claimed for this application.				\$ 0.00	
SUBTOTAL =				\$ 2,750.00	
Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 C.F.R. §§ 1.492(f)).				\$ 0.00	
TOTAL NATIONAL FEE =				\$ 2,750.00	
Fee for recording the enclosed assignment (37 C.F.R. § 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 C.F.R. §§ 3.28, 3.31). \$40.00 per property.				\$ 40.00	
TOTAL FEES ENCLOSED =				\$ 2,790.00	
				Amount to be refunded	\$
				Amount to be charged	\$
a. <input checked="" type="checkbox"/> A check in the amount of \$ 2,790.00 to cover the above fees is enclosed.					
b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.					
c. <input checked="" type="checkbox"/> The Director is hereby authorized to charge any additional fees that may be required, or credit any overpayment, to Deposit Account No. 02-4550. A duplicate copy of this sheet is enclosed.					
d. <input checked="" type="checkbox"/> Please return the enclosed postcard to confirm that the items listed above have been received.					
NOTE: Where an appropriate time limit under 37 C.F.R. § 1.494 or § 1.495 has not been met, a petition to revive (37 C.F.R. § 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO THE ADDRESS ASSOCIATED WITH CUSTOMER NUMBER 36218					
KLARQUIST SPARKMAN, LLP One World Trade Center, Suite 1600 121 S.W. Salmon Street Portland, OR 97204-2988					
SIGNATURE Susan Albert Siegel, Ph.D. NAME 43,121 REGISTRATION NUMBER					

cc: Docketing

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Moss *et al.*

Application No. Not yet assigned

Filed: Herewith

Confirmation No. Not yet assigned

For: FACTORS THAT BIND INTESTINAL  
TOXINS

Examiner: Not yet assigned

Art Unit: Not yet assigned

Attorney Reference No. 4239-66646-06

**CERTIFICATE OF EXPRESS MAILING**

I hereby certify that this paper and the documents referred to as being attached or enclosed herewith are being deposited with the United States Postal Service as Express Mail Label No. EV510808334US in an envelope addressed to: MAIL STOP PCT, COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450 on the date shown below.

Agent  
for Applicant(s)

Date Mailed March 3, 2005

MAIL STOP PCT  
COMMISSIONER FOR PATENTS  
P.O. BOX 1450  
ALEXANDRIA, VA 22313-1450

**PRELIMINARY AMENDMENT**

Prior to examination of the above-referenced patent application, please amend the application as follows:

Amendments to the Specification begin on page 2.

Amendments to the Claims are reflected in the listing of claims, which begins on page 3.

Remarks begin on page 12.



**Amendments to the Specification**

Please replace the paragraph beginning at page 1, line 3, immediately following the title, with the following rewritten paragraph:

**--PRIORITY CLAIM**

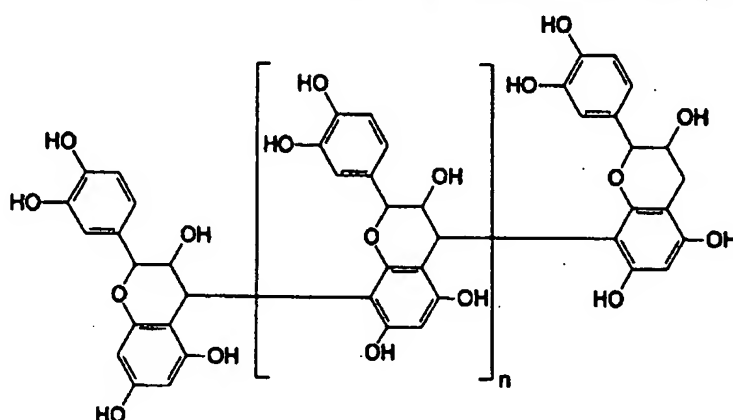
This is the § 371 U.S. National Stage of International Application No. PCT/US2003/028282, filed September 9, 2003, which was published in English under PCT Article 21(2), which in turn claims the benefit of U.S. Provisional Application No. 60/409,742, filed September 10, 2002, which is incorporated by reference in its entirety.--

Please insert the attached Abstract as page 43 of the specification.

### Claims

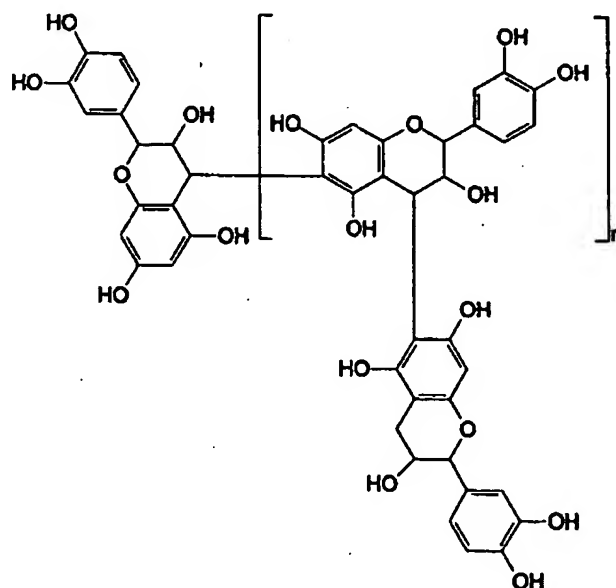
1. (original) A method for treating a subject having an infection caused by an Stx-producing organism by administering to the subject a therapeutically effective amount of hop bract tannin.
2. (original) The method of claim 1 further comprising administering to the subject a therapeutically effective amount of an antibiotic, the antibiotic being effective to treat an infection with the Stx-producing organism.
3. (original) The method of claim 2, wherein the antibiotic is selected from the group consisting of cefixime, tetracycline, ciprofloxacin, co-trimoxazole, norfloxacin, ofloxacin, fosfomycin and kanamycin and combinations thereof.
4. (original) The method of claim 1, wherein the hop bract tannin comprises a catechin polymer.
5. (original) The method of claim 4, wherein the catechin polymer comprises a polycatechin between a 10-mer and a 30-mer.
6. (original) The method of claim 1, wherein the infection is an enteric infection.
7. (original) The method of claim 6, wherein the hop bract tannin is administered enterically.

8. (original) The method of claim 5 where the polycatechin has the formula



where  $n=8$  to 28.

9. (original) The method of claim 5 where the polycatechin has the formula



where  $n = 8$  to 28.

10. (original) The method of claim 1, wherein the hop bract tannin comprises a fraction isolated from a hop bract extract.

11. (original) The method of claim 10, wherein the fraction has a weight-average molecular mass between 5kDa and 30 kDa.

12. (original) The method of claim 1, wherein the Stx-producing organism comprises an Stx1-producing organism.

13. (original) The method of claim 1, wherein the Stx-producing organism is a Shiga toxin-producing *Eschericia coli*.

14. (original) The method of claim 1, wherein the infection is an enteric infection, and the hop bract tannin comprises a polycatechin between a 10-mer and a 30-mer, which is administered enterically.

15. (original) The method of claim 14, wherein the infection presents clinically as severe diarrhea, hemorrhagic colitis, hemolytic uremic syndrome and thrombotic thrombocytopenic purpura.

16. (canceled)

17. (currently amended) ~~A method of treating a subject having an infection of an Stx-producing organism, comprising~~ The method of claim 1, wherein administering to the subject a therapeutically effective amount of hop bract tannin comprises:

selecting a hop bract tannin having an affinity for an Stx produced by the Stx-producing organism; and

administering the hop bract tannin to the subject enterically in an amount effective to alleviate a clinical presentation of the infection.

18. (original) The method of claim 17, wherein selecting comprises isolating hop bract tannin from a hop bract extract by affinity chromatography with a chromatographic matrix derivatized with the Stx.

19. (original) The method of claim 17, wherein selecting comprises obtaining a high molecular weight fraction of a hop bract extract.

20. (original) The method of claim 19, wherein the high molecular weight fraction has a weight-average molecular weight of 5 kDa or greater.

21. (original) The method of claim 17, wherein selecting comprises detecting a hop bract tannin component having an affinity for the Stx.

22. (currently amended) The method of claim 21, wherein detecting a component having an affinity for the Stx comprises detecting a signal generated by a biosensor, the biosensor having a hop bract tannin as the a bioreceptor portion of the biosensor.

23. (original) The method of claim 22 where the hop bract tannin is a polycatechin.

24. (original) The method of claim 23 where the polycatechin is between a 10-mer and a 30-mer polycatechin.

25. - 26. (canceled)

27. (original) The method of claim 17, wherein the clinical presentation of the infection is one or more of severe diarrhea, hemorrhagic colitis, hemolytic uremic syndrome and thrombotic thrombocytopenic purpura.

28. (canceled)

29. (original) A method for detecting the presence of an Stx in a biological sample, comprising:

contacting the biological sample with a hop bract tannin; and

detecting a macromolecular complex between the Stx and the hop bract tannin.

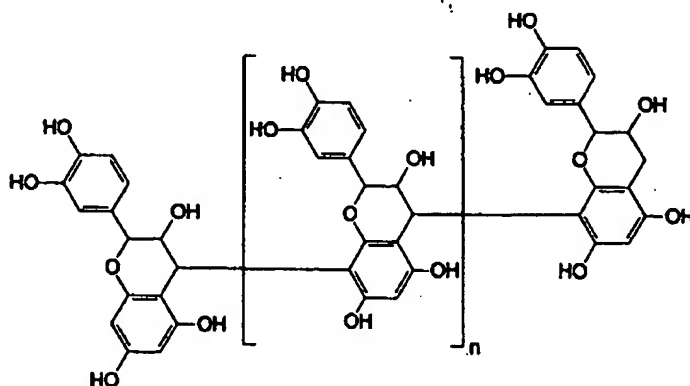
30. (original) The method of claim 29, wherein detecting comprises detecting a precipitate comprising the complex.

31. (original) The method of claim 29, wherein detecting the macromolecular complex between the hop bract tannin and the Stx comprises detecting an electrophoretic pattern associated with the presence of the macromolecular complex in the sample.

32. (original) The method of claim 29, wherein the hop bract tannin serves as a bioreceptor of a biosensor and detecting comprises measuring a change in a property of a transducer of the biosensor.

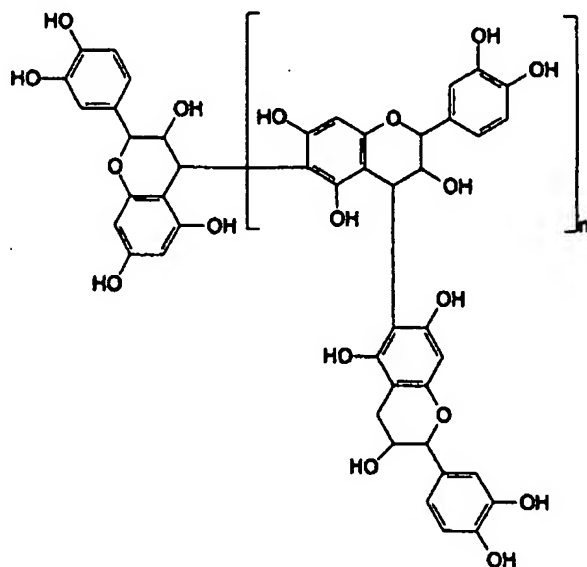
33. (original) The method of claim 29, wherein the hop bract tannin is a polycatechin between a 10-mer and a 30-mer.

34. (original) The method of claim 29, wherein the polycatechin has the formula



where  $n = 8$  to 28, or





where  $n = 8$  to 28.

35. (original) The method of claim 29, wherein the hop bract tannin comprises a fraction isolated from a hop bract extract.

36. (original) The method of claim 35, wherein the fraction has a weight-average molecular mass between 5kDa and 30 kDa.

**37. (currently amended) A method for isolating and purifying Stx-binding polyphenols, comprising:**

contacting a mixture comprising [an]a Stx-binding polyphenolic compound isolated from *Humulus lupulus* with an Stx to form a macromolecular complex between the compound and the Stx;

isolating the macromolecular complex; and

separating the polyphenolic compound from the macromolecular complex to obtain a purified sample of the polyphenolic compound that binds Stx.

38. (original) The method of claim 37, wherein the Stx is coupled to an activated chromatographic matrix.

39. (original) The method of claim 37, wherein the Stx comprises the bioreceptor of a biosensor.

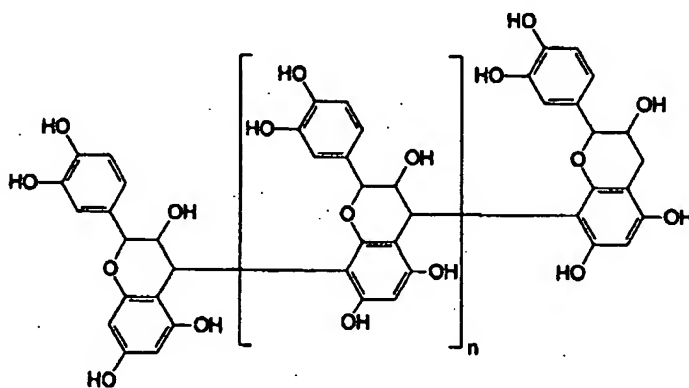
40. (original) The method of claim 38, wherein the Stx is Stx1.

41. (original) A method for prophylactic or post-exposure treatment of an inhaled Stx comprising administering a therapeutically effective amount of hop bract tannin intranasally to a subject.

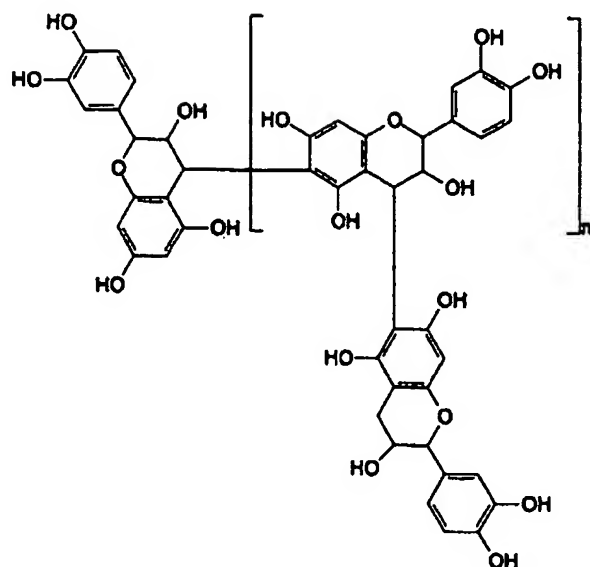
42. (original) A biosensor, comprising:  
a hop bract tannin as a bioreceptor, and  
a transducer.

43. (original) The biosensor of claim 42, wherein the hop bract tannin is a polycatechin between a 10-mer and a 30-mer.

44. (original) The method of claim 43, wherein the polycatechin has the formula



where  $n = 8$  to 28, or



where  $n = 8$  to  $28$ .

45. (original) The method of claim 42, wherein the hop bract tannin comprises a fraction isolated from a hop bract extract.

46. (original) The method of claim 45, wherein the fraction has a weight-average molecular mass between 5kDa and 30 kDa.

47.-57. (canceled)

58. (original) A method for neutralizing a bacterial toxin, comprising:  
providing a hop bract tannin; and  
contacting the bacterial toxin with the hop bract tannin to neutralize the toxin.

59. (original) The method of claim 58, wherein the bacterial toxin is selected from the group consisting of Shiga toxins and cholera toxins.

60. (original) The method of claim 58, wherein the hop bract tannin comprises a subfraction having a weight-average molecular weight from 5 kDa to 30 kDa.

61. (original) The method of claim 58, wherein the hop bract tannin comprises a polycatechin selected from the group of 10-mers to 30-mers, and mixtures thereof.

62. (original) An isolated polyphenolic component of a high molecular weight fraction of a hop bract extract, the high molecular weight fraction having a weight average molecular weight of greater than 5 kDa.

63. (original) A subfraction of a high molecular weight fraction of a hop bract extract, the high molecular weight fraction having a weight average molecular weight of greater than 5 kDa.

64. (original) The subfraction of claim 63, wherein the subfraction has a weight average molecular weight range selected from the group consisting of 5 kDa-30kDa, 5kDa-10kDa, 5kDa-8kDa, 8kDa-30kDa, 8kDa-10kDa and 10kDa-30kDa.

Remarks

By this Amendment the specification has been amended to reflect prior related applications and to add an abstract on a separate page.

Claims 16, 26, 28 and 47-57 have been canceled, solely to reduce the filing fee and not for reasons of patentability. Claim 25 was inadvertently not included in the parent PCT application. To conform with the requirements of U.S. patent practice, claim 25 is indicated to be canceled. Claims 22 and 37 have been amended to correct matters of form. Claim 17 has been amended to be in dependent form, solely to reduce the filing fee.

The present application is being filed with a reduced filing fee under 37 CFR 1.492(a)(4), because the international preliminary examination fee was paid to the United States Patent and Trademark Office, and the international preliminary examination report (IPER) stated that the criteria of novelty, inventive step (non-obviousness), and industrial applicability, as defined in PCT Article 33(1)-(4), have been satisfied for all the claims presented in the application entering the national stage. As the claim amendments were made solely to reduce the filing fee, and to correct matters of form, Applicants believe that they are entitled to the reduced fee. If the United States Patent and Trademark Office determines that the standard filing fee is due, please charge this fee to Deposit Account No. 02-4550.

No new matter has been added by this Amendment.

Conclusion

If any minor matters remain to be resolved before examination of this application, please call the undersigned at the telephone number listed below.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

By

  
Susan Alpert Siegel, Ph.D.  
Registration No. 43,121

One World Trade Center, Suite 1600  
121 S.W. Salmon Street  
Portland, Oregon 97204  
Telephone: (503) 595-5300  
Facsimile: (503) 228-9446

## ABSTRACT

### FACTORS THAT BIND INTESTINAL TOXINS

- 5        Methods for neutralizing bacterial toxins such as Shiga toxins and cholera toxins are disclosed. In a particular embodiment, a method is provided for treating a subject suffering from an infection caused by an Stx-producing organism by administering a therapeutically effective amount of a hop bract tannin obtained from *Humulus lupulus*. Also provided are methods for isolating polyphenolic compounds that bind Stx
- 10    molecules, and methods for detecting the presence of Stx molecules in a biological sample. In a disclosed embodiment, a subject infected with a Shiga toxin-producing *E. coli* strain is treated by enterically administering a high molecular weight fraction of hop bract extract to the subject.

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**